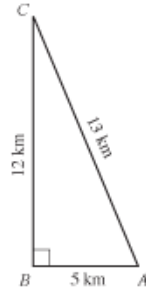


[▶ my account](#)[Home](#) [Registration](#) [Test Prep](#) [Scores](#) [College Planning](#) [Financial Aid](#) [Career Planning](#) [Student Blog](#) [FAQs](#)**Practice Questions:**[English](#)[Math](#)[Reading](#)[Science](#)[Writing](#)[Set 1](#)[Set 2](#)[Set 3](#)[Set 4](#)[Set 5](#)**SAMPLE MATHEMATICS TEST QUESTIONS**[DIRECTIONS ▶](#)

Click on the letter choices to determine if you have the correct answer and for question explanations.  
An actual ACT Mathematics Test contains 60 questions to be answered in 60 minutes.

**Set 2**

1. The *lead* of a screw is the distance that the screw advances in a straight line when the screw is turned 1 complete turn. If a screw is  $2\frac{1}{2}$  inches long and has a lead of  $\frac{1}{8}$  inch, how many complete turns would get it all the way into a piece of wood?  
[A.](#) 5  
[B.](#) 10  
[C.](#) 15  
[D.](#) 20  
[E.](#) 25
2. If  $xy = 144$ ,  $x + y = 30$ , and  $x > y$ , what is the value of  $x - y$ ?  
[F.](#) 4  
[G.](#) 6  
[H.](#) 18  
[J.](#) 22  
[K.](#) 24
3. Which of the following is the sine of  $\angle A$  in the right triangle below?



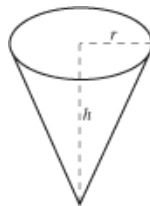
- A.  $\frac{5}{13}$
- B.  $\frac{5}{12}$
- C.  $\frac{12}{13}$
- D.  $\frac{12}{5}$
- E.  $\frac{13}{5}$

4. Ding's Diner advertised this daily lunch special: "Choose 1 item from each column—only \$4.95!" Thus, each daily lunch special consists of a salad, a soup, a sandwich, and a drink.

Salads	Soups	Sandwiches	Drinks
cole slaw lettuce potato	onion tomato	meat loaf chicken hamburger ham tenderloin	milk cola coffee tea

How many different daily lunch specials are possible?

- F. 4
  - G. 14
  - H. 30
  - J. 120
  - K. 180
5. The volume,  $V$ , of the right circular cone with radius  $r$  and height  $h$ , shown below, can be found using the formula  $V = \frac{1}{3}\pi r^2 h$ . A cone-shaped paper cup has a volume of 142 cubic centimeters and a height of 8.5 centimeters. What is the radius, to the nearest centimeter, of the paper cup?



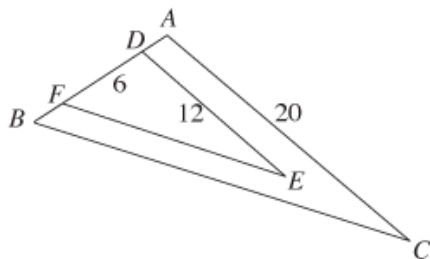
- A. 2
- B. 4

- C. 8
- D. 12
- E. 16

6. A boat departs Port Isabelle, Texas, traveling to an oil rig. The oil rig is located 9 miles east and 12 miles north of the boat's departure point. About how many miles is the oil rig from the departure point?

- F. 3
- G.  $\sqrt{63}$
- H. 15
- J. 21
- K. 225

7. In the figure below,  $\angle ABC \cong \angle DFE$ ,  $\angle BAC \cong \angle FDE$ ,  $D$  and  $F$  are on  $\overline{AB}$ ,  $\overline{AD} \cong \overline{FB}$ , and distances in centimeters are as shown. What is the length of  $\overline{AD}$ , in centimeters?



- A. 5
  - B. 4
  - C. 3
  - D. 2
  - E. 1
8. Which of the following is a factor of the polynomial  $2x^2 - 3x - 5$ ?
- F.  $x - 1$
  - G.  $2x - 3$
  - H.  $2x - 5$
  - J.  $2x + 5$
  - K.  $3x + 5$

9. What is  $x$ , the second term in the geometric series  $\frac{1}{4} + x + \frac{1}{36} + \frac{1}{108} + \dots$ ?
- (Note: In a geometric series the ratio of any term to the following term is constant.)

- A.  $\frac{1}{3}$
- B.  $\frac{1}{9}$
- C.  $\frac{1}{12}$
- D.  $\frac{1}{18}$

[E.](#)  $\frac{1}{18}$

10. What is the slope of any line parallel to the line  $9x + 4y = 7$  ?

[F.](#)  $-9$

[G.](#)  $-\frac{9}{4}$

[H.](#)  $\frac{9}{7}$

[J.](#)  $7$

[K.](#)  $9$

11. A DVD player with a list price of \$100 is marked down 30%.  
If John gets an employee discount of 20% off the sale price,  
how much does John pay for the DVD player ?

[A.](#) \$86.00

[B.](#) \$77.60

[C.](#) \$56.00

[D.](#) \$50.00

[E.](#) \$44.00

12.  $\sqrt{-(-9)^2} = ?$   
(Note:  $i = \sqrt{-1}$  )

[F.](#)  $9i$

[G.](#)  $9 + i$

[H.](#)  $9 - i$

[J.](#)  $9$

[K.](#)  $-9$